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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/145,180	09/01/1998	JIA-HE LI	23356-M5	5665

7590 09/10/2003
NIXON & VANDERHYE P.C.,
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ARLINGTON, VA 22201

EXAMINER

WANG, SHENGJUN

ART UNIT	PAPER NUMBER
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1617

DATE MAILED: 09/10/2003

32

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/145,180

Applicant(s)

LI ET AL.

Examiner

Shengjun Wang

Art Unit

1617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 184-233 is/are pending in the application.
- 4a) Of the above claim(s) 193,195,197-206,208,214,215 and 217-233 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 184-192,194,207,209-213 and 216 is/are rejected.
- 7) ☒ Claim(s) 196 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Receipt of applicants' appeal brief filed May 27, 2003 is acknowledged.
2. The finality of the office action mailed May 24, 2002 is withdrawn in favor of the following rejection.
3. Note the claims have been examined insofar as they read on the elected invention and species elected in papers No. 11, and 13. The elected compound recited in claim 196 is found allowable with respect to the elected invention. Search has been expanded to non-elected compound.

Claim Objections

1. Claim 196 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims Rejections 35 U.S.C. - 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 184-192, 194, 207, 209-213 and 216 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weltin et al. (AT of page 5, IDS paper No. 3) in view of Banasik et al. (AH, IDS paper No. 4), and Endres et al. (AT of page 2, IDS paper No. 3)

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3. Weltin et al. (AT of page 5, IDS paper No. 3) teach that 6(5H)-phenanthrindinone, an isoquinoline derivative, is a potent inhibitor of poly (ADP-ribose) polymerase (PARP). See the abstract and Figure 1.

Weltin et al. do not teach expressly the employment of a substituted 6(5H)-phenanthrindinone, 2-nitro-6 (5H)-phenanthrindinone, for treating ischemia.

However, Endres et. al. (AT of page 2, IDS paper No. 3) teach a method of treating ischemia by inhibition of PARP activity. See page 1144, third paragraph. Banasik et al teaches that 2-nitro substituted 6(5H)-phenanthrindinone have more inhibition activity against PARP than 6(5H)-phenanthrindinone. (IC₅₀ 0.35 μ M). See page 1573 right column, compound No. 3.

Therefore it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ substituted 6(5H)-phenanthrindinone, e.g., 2-nitro-6 (5H)-phenanthrindinone for treating ischemia because PARP inhibitors are known to be useful for treating ischemia, and 2-nitro-6 (5H)-phenanthrindinone is a more potent PARP inhibitor than 6(5H)-phenanthrindinone. Further, it would have been obvious to employ 2-nitro-10-methyl-6 (5H)-phenanthrindinone for treating ischemia since it is a homologous of 2-nitro-6 (5H)-phenanthrindinone, i.e., they differ only by a CH₂ group. One having ordinary skill in the art would have been motivated to prepare the instantly claimed compound because such structurally homologous compounds are expected to possess similar properties. It has been held that compounds that are structurally homologous to prior art compounds are prima facie obvious, absent a showing of unexpected results. In re Hass, 60 USPQ 544 (CCPA 1944); In re Henze, 85 USPQ 261 (CCPA 1950).

Response to the Arguments

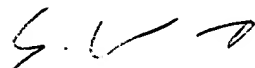
Applicants' arguments presented in the appeal brief have been fully considered, but are essentially moot in view of the new ground rejection. With respect to the remarks that "Banasik discloses 76 different compounds, only two of which are phenanthrindinone. Absent the appellants disclosure, there is no motivation in Banasik to focus on phenanthridinones." Note 2-nitro-6 (5H)-phenanthrindinone is disclosed by Banasik as one of the most potent inhibitors for PARP. The motivation is there.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shengjun Wang, Ph.D. whose telephone number is (703) 308-4554. The examiner can normally be reached on Monday-Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, can be reached on (703) 305-1877. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Patent Examiner



Shengjun Wang

September 5, 2003



SREENI PADMANABHAN
PRIMARY EXAMINER

SEP 16 17 9/17/03